

Comparison of Diabetes Related Distress and Psychological Well-being among Patients with Type I and Type II Diabetes Mellitus

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Abstract

Background: The chronic disease of diabetes mellitus aggravates both physical and psychological health of the patients. Irrespective to its type, patients diagnosed with diabetes are vulnerable to psychological chaos and disease related distress. So, the objective of the present study was to determine and compare the diabetes related distress and psychological well-being experienced by patients with type I and type II diabetes mellitus.

Patients and Methods: Two hundred diabetes patients ($n = 200$), dwelling in Faisalabad, were recruited for the current study from January 2017 to July 2017 via purposive sampling method. Half of them ($n = 100$) diagnosed with type I diabetes, whilst half of them ($n = 100$) with type II diabetes. Comparative research method with independent group design was applied whereby both groups were compared with each other. Demographic information form, Diabetes Distress Scale and Psychological well-being scale were used as research instruments.

Results: Independent samples t-test exemplified that patients with type II diabetes mellitus significantly reported more emotional burden ($t = -10.861$, $df = 198$, $p = .000$) than type I diabetes. Patients suffering from type II diabetes also reported less autonomy ($t = 4.941$, $df = 198$, $p = .000$), environmental mastery ($t = 1.071$, $df = 198$, $p = .000$) and purpose in life ($t = .984$, $df = 198$, $p = .000$) than patients with type I diabetic mellitus.

Conclusion: Type II diabetes mellitus is more detrimental for patients in terms of experiencing more emotional burden and poor psychological well-being (i.e, less autonomy, environmental mastery and purpose in life) than type I diabetes mellitus.

Key words: Type I diabetes, type II diabetes, diabetes distress, psychological well-being.

Introduction

Worldwide drastic upsurge of diabetic mellitus is alarming that has adversely affected the people of all genres. To see the numbers of reported cases, it sounds that disease is now beyond of any control. By the year of 2040, the expected ratio of diabetes mellitus will rise to 10.4%.¹ Developing countries have been massively affected and amidst them, Pakistan is likely to be ranked fourth.²

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Authors Contribution

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Patients experiencing diabetes mellitus usually report higher levels of sugar in their blood for a longer period of time.³ Due to this, patients persistently need to urinate, to take food and water. Diabetic mellitus results in pancreatic deficiency blocking the release of sufficient insulin essential for human body.⁴

There are two main forms of diabetes mellitus people are commonly suffering from. Type I diabetes mellitus is formerly known as insulin-dependent/ juvenile/ early onset diabetes mellitus, whereas type II diabetes is formerly called as non-insulin dependent/adult onset diabetes.⁴ The level of glucose could not be sustained owing to the insulin resistance in the body.³

Most of the time, diabetic patients experience diabetes related distress owing to associated complications. Diabetes distress is usually linked with rigorous requirements, for instance, behavior management to regulate diet, exercises and so on.⁵ Patients with diabetic distress seems to report emotional burden, physician-related distress, regimen-related distress and interpersonal

distress.⁶ Research evidences provided an association of diabetic distress with poor self-management behavior.⁷ As a result, patients remain worried pertaining to their disease.⁸ The level of motivation, health, life quality and psychological well-being gets declined owing to diabetes distress.⁹

A substantial literature highlights that psychological well-being enables a person to enjoy life, keep balance in daily activities and sustain psychological flexibility.¹⁰ Unfortunately, diabetic patients suffer from distress and psychological upheavals like depression.¹¹ Co-morbidity of diabetes distress and psychological well-being is also evident among patients diagnosed with diabetes mellitus.¹² Various psychological disorders such as; eating disorder,¹³ adjustment disorder, depressive disorder and generalized anxiety disorder¹⁴ and depression and anxiety¹⁵ have been reported by diabetic patients.

So far scientific literature elucidated the prevalence of diabetes mellitus and its physical and psychological complications. However, few researches have examined the psychological well-being among diabetic and non-diabetic patients.¹⁶ Paucity of scientific evidences pertaining to diabetes related distress and psychological chaos has spurred the investigation of distress and psychological health among both types of diabetic patients. The present scientific inquiry will provide knowledge concerning type I and II diabetes related distress and psychological repercussions. So, the key assumptions of the present study are as follows:

1. There would be a significant difference among type I and type II diabetic patients in respect to emotional burden, physician-related distress, regimen-related distress and interpersonal distress.
2. There would be a significant difference among type I and type II diabetic patients in respect to autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and self-acceptance.

Patients and Methods

Purposive sampling method has been applied to recruit two hundred (n = 200) diabetic patients from different hospitals/clinics situated in Faisalabad. One hundred participants (n = 100) were suffering from type I diabetes mellitus, whereas rest of the patients were suffering from type II (n = 100) diabetes mellitus. They were between 21 to 50 years. At least 2 years of the duration of diagnoses (diabetes) was incumbent for selection. Patients with co-morbid chronic maladies

for instance, hepatitis, cardiac problems, asthma, or diabetes related complications were not included. Infertile, widow/widower, divorcee and unemployed (for males) patients were also excluded at the time of selection.

Basic personal information from every participant (for example, age, gender, educational level, marital status, employment, duration of diabetes mellitus, type of diabetes mellitus, treatment procedure, co-morbid illness, associated physical complication, etc) was compiled with Personal Information Form. Urdu version¹⁷ of Diabetes Distress Scale (DDS)¹⁸ detected the diabetes distress among participants. There are 17 items of DDS with 4 subscales named: emotional burden (5-items), physician-related distress (4-items), regimen-related distress (5-items) and interpersonal distress (3-items). Responses are rated on 6 points of continuum (Not a problem = 1, a slight problem = 2, a moderate problem = 3, somewhat serious problem = 4, a serious problem = 5, a very serious problem = 6). Urdu Version has been reported as reliable research instrument ($\alpha = 0.73$).

Psychological Well-being Scale was selected to measure the variable of psychological well-being among present sample. It has 42 items with 6 subscales (autonomy, environmental mastery, personal growth, positive relations, purpose in life and self-acceptance) to be also scored on 6-points of likert scale [Strongly disagree = 1, moderately disagree = 2, slightly disagree = 3, slightly agree = 4, moderately agree = 5, strongly agree = 6]. Reported reliability of Urdu version of PWB is translated version ($\alpha = .71$).¹⁹

Having approval from Ethical Review Committee (ERC) of affiliated institution, research data was collected over a period of six months. In order to approach both types of diabetic patients, doctors of private clinics and hospital administration were contacted to make necessary arrangements for data collection. With their permission, meetings with registered patients were held at clinics and hospitals. Written consent for every patient was also taken while briefing research purpose, risk/benefit ratio, confidentiality and procedure for being volunteer participants of the study. First, through Personal Information Form, some basic and necessary information related to disease was taken from patients and then inquired and confirmed by their doctors in order to control those factors which might influence the results of the current study. Then, participants were given other questionnaires to be answered on each item. Subsequently, descriptive statistics (frequency, percentage) of demographic information and independent samples

t-test was calculated to test the research hypotheses through SPSS Version-20.0.

Results

Among all patients, 50% were males and 50% were females. Majority (53%) patients were between 31 to 40 years and most of them (38%) were matriculate. About 63.5% patients were married. About 50% patients were suffering from type I diabetes and 50% from type II diabetes. More than 5 years of duration of diabetes mellitus was observed for majority of the patients (58%). Though, half patients were experiencing type I diabetes who received treatment through only injection (50%). Among with type II diabetes, about 33.5% patients were taking oral treatment and 16.5% were receiving both kinds of treatment (oral and injection) to manage their disease (Table-1).

Table-2 reveals that type II diabetic patients significantly experienced more emotional burden ($t = -2.046$, $df = 198$, $p = .042$) as compare to type I diabetes patients. Both types of patients did not significantly differ on physician- related distress ($t = -.147$, $df = 198$, $p = .253$), regimen related distress ($t = -.650$, $df = 198$, $p = .516$) and interpersonal distress ($t = -.655$, $df = 198$, $p = .513$).

Table-3 also has shown a significant difference among patients with type I and II diabetes mellitus on subscales of psychological well-being. Patients with type I diabetes mellitus significantly have reported more sense of autonomy ($t = 4.941$, $df = 198$, $p = .000$), environmental mastery ($t = 1.071$, $df = 198$, $p = .000$) and purpose in life ($t = .984$, $df = 198$, $p = .000$) as compare to patients with type II diabetes mellitus. A non-significant difference

has been noticed among both types of patients on the variables of personal growth ($t = -.041$, $df = 198$, $p = .967$), positive relations with others ($t = .158$, $df = 198$, $p = .874$) and self-acceptance ($t = -.054$, $df = 198$, $p = .957$) as well.

Discussion

The present paper probed the diabetes distress in patients with type I and II diabetes mellitus and found type II diabetic patients experiencing more emotional burden in comparison to type I diabetic patients (Table-1).

Table 1: Summary of personal and disease related Information. (n = 200)

Characteristics		F	%
Age	21-30	53	26.5
	31-40	106	53.0
	41-50	41	20.5
Gender	Male	100	50.0
	Female	100	50.0
Educational level	Matric	76	38.0
	Intermediate	71	35.5
	Graduate	47	23.5
	Masters	6	3.0
Marital Status	Single	73	36.5
	Married	127	63.5
Type of diabetes	Type I	100	50.0
	Type II	100	50.0
Duration of disease	< 5 years	84	42.0
	> 5 years	116	58.0
Type of treatment	Oral	67	33.5
	Injection	100	50.0
	Both	33	16.5

Table 2: Summary of independent samples t-test showing difference among type I and II diabetic patients in relation to diabetes distress. (n = 100)

Diabetes Distress	Type I		Type II		df	t	p
	M	SD	M	SD			
Emotional burden	21.25	3.05	22.16	3.23	198	-2.04	.042
Physician related distress	13.82	2.78	14.31	3.24	198	-.147	.253
Regimen related distress	20.69	3.03	20.97	3.05	198	-.650	.516
Interpersonal distress	11.32	2.22	11.09	2.71	198	-.655	.513

Table 3: Summary of independent samples t-test showing difference among type I and II diabetic patients in relation to psychological well-being. (n = 100)

Dimensions of Psychological well-being	Type I		Type II		df	t	p
	M	SD	M	SD			
Autonomy	27.66	6.34	24.01	3.79	198	4.941	.000
Environmental mastery	25.08	3.78	24.55	3.18	198	1.071	.000
Personal growth	24.26	3.16	24.28	3.67	198	-.041	.967
Positive relations with others	25.74	3.29	25.66	3.82	198	.158	.874
Purpose in life	25.25	3.97	24.74	3.32	198	.984	.000
Self-acceptance	25.09	4.32	25.12	3.49	198	-.054	.957

It depicts that patients with type II diabetes mellitus seemed to be emotionally overwhelmed by their ailment. Intensive requirements for managing disease such as: controlling diet, physical activities, level of insulin/ glucose, and medicines might have escalated emotional burden and frustration among patients.⁶ Besides, associated difficulties are potent stressors leading distress among type II diabetic patients.²⁰ Due to greater health care used and cost, type II diabetes has caused economic burden on health care system.²

Albeit, there is no definite time for the onset of type II diabetes, for this reason, sudden diagnosis may escalate apprehension and worries. A person who lived healthy for years may have difficulty in adopting the life style that necessitates abstinence. Contrary to that, type I diabetes is commonly diagnosed at early age, therefore, patients with the passage of time learn how to manage their illness. Before indulging in practical life, they might have polished their skills in order to cope up with daily life issues. The time comes when patients become adhered to treatment procedure and disease related management, as a result, their disease related emotional burden gets decreased. This is also justified by another study that investigated an association between diabetes mellitus and distress.²¹

Another aim of the current study was to compare the psychological well-being in patients with type I and type II diabetes mellitus. The findings (Table-2) revealed significant difference among type I and type II diabetic patients in respect to autonomy, environmental mastery and purpose in life (subscales of psychological well-being).

It could be said that patients with type I diabetes than type II diabetes, seem to be more confident and managed in response to social pressure, environmental tasks and well enough to direct own self according to their life purpose. The reason is that type I diabetes patients, from the beginning, are familiar to the affiliated complications of their disease. Having knowledge concerning disease at early stage of life make them habituated of new life style. These arguments are also supported by a previous study that depicted internal locus of control beliefs and disease related education to be connected with psychological well-being of patients with type I diabetes mellitus.²² Due to this, patients diagnosed with type I diabetes did not perceive greater influence of their disease on life.²³

On the other hand, a significant influence of type II diabetes mellitus was observed on the psychological well-being of patients.²⁴ As a result, they are more prone to stress, anxiety and depression.²⁵ Knowledge of long terms snags may

predict lower well-being²³ besides terrifying them.²² Resultantly, in the present research psychological well-being (i.e, autonomy, environmental mastery and purpose in life) of type II diabetes patients seemed to be lower than type I diabetes patients.

Considering present research findings, it can be concluded that both types of diabetes mellitus put different impact on patients. Type II diabetes patients experience more diabetes distress in form of emotional burden than type I diabetes patients. Conversely, type I diabetes patients seemed to be having more sense of autonomy, environmental mastery and purpose in life than type II diabetes patients. Physical Health Professionals need to consider the disparate influence of both types of diabetes mellitus on patient's behavior and psychological state while providing health care services to them.

Some significant limitations have been observed. For instance, sample size was not calculated to ensure random selection of the participants. Recruitment of two hundred patients was solely based on their diagnosis and other inclusive/ exclusive criteria set to meet the present purpose. Furthermore, the present study could not address the psychological health status and disease related distress among patients experiencing additional complications of diabetes such as; neuropathy, nerve damage, retinopathy, erectile dysfunction, cardiac problem or kidney damage. In future, impact of these complications along with diabetes on psychological health of patients must be investigated in order to enhance health care facilities.

References

1. IDF. Diabetes Atlas – 7th Edition. (Accessed on 4th September 2017) Available from URL: https://www.idf.org/sites/default/files/EN_6E_Atlas_Full_0.pdf
2. Qidwai W, Ashfaq T. Imminent epidemic of diabetes mellitus in Pakistan: Issues and challenges for health care providers. *J Liaquat Uni Med Health Sci* 2010; 9: 112-3.
3. WHO. Global Report on Diabetes. (Accessed on 4th September 2017) Available from URL: http://apps.who.int/iris/bitstream/10665/204871/1/9789241565257_eng.pdf
4. WHO. Diabetes. (Accessed on 4th September 2017) Available from URL: <http://www.who.int/mediacentre/factsheets/fs312/en/>
5. Karlson B, Idsoe T, Dirdal I, Rokne HB, Bru E. Effects of a group-based counseling program on diabetes-related stress, coping, psychological well-being and metabolic control in adults with type 1 or type 2 diabetes. *Pat Edu Counsel* 2004; 53(3): 299-308.
6. Fisher L, Mullan JT, Skaff MM, Glasgow RE, Areal P, Hessler D. Predicting diabetes distress in patients

- with type 2 diabetes: A longitudinal study. *Diabet Med* 2009; 26: 622-7.
7. Hermanns N, Kulzer B, Krichbaum M, Kubiak T, Haak T. How to screen for depression and emotional problems in patients with diabetes: Comparison of screening characteristics of depression questionnaires, measurement of diabetes-specific emotional problems and standard clinical assessment. *Diabetologia* 2006; 49(3): 469-77.
8. Polonsky P, Fisher L, Earles J. Assessing psychosocial distress in diabetes quality of life. *J Psychol Health Med*. 2009; 12 (5), 545-55.
9. Rubin RR, Young-Hyman D, Peyrot M. Parent-child responsibility and conflict in diabetes care. *Diabetes* 1989; 38(2): 28.
10. Kitchener BA, Jorm AF. *Mental Health First Aid Manual*. Canberra: Centre for Mental Health Research, 2002.
11. Doumit J, Nasser R. Quality of life and wellbeing of the elderly in Lebanese nursing homes. *Int J Health Care* 2010; 23: 72-93.
12. Goldney RD, Phillips PJ, Fisher LJ, Wilson DH. Diabetes, depression, and quality of life a population study. *Diabet Care* 2004; 27(5): 1066-70.
13. Jones JM, Lawson ML, Daneman D, Olmsted MP, Rodin G. Eating disorders in adolescent females with and without type 1 diabetes: cross sectional study. *Br Med J* 2000; 320: 1563-66.
14. Rauf S, Rehman ZU, Abrar K. Frequency of psychiatric morbidity amongst patients with diabetes mellitus in a medical outpatient. *Pak Armed Forces Med J* 2005; 55(1): 14-7.
15. Munaf S, Asmat A. Anxiety and depression: A study of diabetic types. *FWU J Soc Sci* 2016; 10(1): 88-95.
16. Naess S, Midtjell K, Moum T, Sorensen T, Tambs K. Diabetes mellitus and psychological well-being. Results of the Nord-Trondelag health survey. *Scand J Soc Med* 1995; 23: 179-88.
17. Kausar R, Awan B, Khan N. Gender differences in risk perception and emotional distress in patients with type 2 diabetes. *J Ind Acad Applied Psychol* 2013; 39(2): 222-7.
18. Polonsky WH, Fisher L, Earles P, Dudl RJ, Lees J, Mullan J, et al. Assessing psychosocial distress in diabetes: Development of the Diabetes Distress Scale. *Diabet Care* 2005; 28(3): 626-31.
19. Ryff C. Happiness is everything, or is it? Explorations on the meaning of psychological Well-being. *J Pers Soc Psychol* 1989; 57:1069-81.
20. Cherrington A, Ayala GX, Sleath B, Corbie-Smith G. Examining knowledge, attitudes, and beliefs about depression among Latino adults with type 2 diabetes. *Diabet Educ* 2006; 32(4): 603-13.
21. Islam MR, Karim MR, Habib SH, Yesmin K. Diabetes distress among type 2 diabetic patients. *Int J Med Biomed Res* 2013; 2(2): 113-24.
22. Pires-Yfantouda R, Evangelii M. The Role of Psychosocial Factors in Wellbeing and Self-Care in Young Adults with Type 1 Diabetes. *Int J Diabet Res* 2012; 1(1):1-6.
23. Eiser JR, Riazi A, Eiser C, Hammersley S, Tooke JE. Predictors of psychological well-being in types 1 and 2 diabetes. *Psychol Health* 2001; 16: 99-110.
24. Debono M, Chacia E. The impact of diabetes on psychological well-being and quality of life. The role of patient education. *Psychol Health Med* 2007; 12(5): 545-55.
25. Kaur G, Tee GH, Ariaratnam S, Krishnapilal AS, China K. Depression, anxiety and stress symptoms among diabetics in Malaysia: A cross-sectional study in an urban primary care setting. *BMC Fam Pract* 2013;14: 69.
26. DeGroot M, Anderson R, Freedland KE, Clouse RE, Lustman PJ. Association of depression and diabetes complications: A meta-analysis. *Psychosom Med* 2001; 63: 619-30.